

Remarks

Claims 1-37 are pending. Applicants assert that all claims are in condition for allowance as set forth more fully below.

103 Rejections

Claims 1-9, 11, 13-18 stand rejected as being unpatentable over Hed (US 5,301,090). Claims 1, 10, 12, 17, 19-26, and 29-37 stand rejected as being unpatentable over Decaudin (US 6,692,250) in view of Hed. Claims 27 and 28 stand rejected as being unpatentable over Decaudin in view of Hed and further in view of Bi (US 2003/0117691). In relation to the currently pending claims, Applicants respectfully traverse these rejections.

Claims 1-18

Amended claim 1 recites a radiation curing apparatus that comprises ... an interconnect circuit layer to provide electrical connection to the plurality of solid state radiation sources, the interconnect circuit layer comprising a dielectric top layer between each solid state radiation source, an electrically conductive adhesive between the solid state radiation source and a conductive layer that carries electrical current to the solid state radiation source, and a substrate layer beneath the conductive layer; a heat exchange unit; and a thermally conductive material to thermally couple the substrate layer of the interconnect circuit layer to the heat exchange unit. These recitations are supported by FIG. 4 and the related discussion.

Neither Hed, Decaudin, nor any of the other cited references disclose these recitations. None of these references disclose this particular configuration of an interconnect circuit layer. Accordingly, claim 1 is allowable for at least these reasons. Dependent claims 2-18 depend from an allowable claim 1 and are also allowable for at least the same reasons. Furthermore, one or more of these dependent claims are allowable for additional reasons. For example, claim 3 recites wherein the heat exchange unit comprises heat dissipation pins extending in a direction opposite that of the optical waveguides. None of the cited references disclose the heat sink having such heat dissipation pins extending in the claimed direction.

Claims 19-30

Claim 19 recites a radiation curing system that comprises... a plurality of optical concentrators within a concentrator array body, wherein each concentrator receives ultraviolet radiation from a corresponding one of said LED dies and wherein the concentrator array body has a depression where each optical concentrator is located; a plurality of optical fibers within a fiber array connector, wherein each of the plurality of optical fibers includes a first end and a second end, wherein each first end receives concentrated ultraviolet radiation from a corresponding concentrator and wherein the fiber array connector includes a protrusion where each first end is located and wherein the protrusion of the fiber array connector is seated within the depression of the concentrator array body such that each concentrator is aligned with each fiber end.... These recitations are supported by FIGs 3 and 4 and the related discussion.

Neither Hed, Decaudin, nor any of the other cited references disclose these recitations. None of these references disclose both a fiber array connector and a concentrator array body, and especially not in this particular configuration where a protrusion of the fiber array connector is seated within the depression of the concentrator array body. Accordingly, claim 19 is allowable for at least these reasons.

Claims 20-30 depend from an allowable base claim and are also allowable for at least the same reasons. Furthermore, one or more of these dependent claims are allowable for additional reasons. For example, claim 26 recites wherein the plurality of fibers are contained within a housing having protrusions on a first end, the fiber array connector having depressions on each side on an end opposite the end where the protrusions of the fiber array connector are located, the protrusions of the housing being seated within the depressions of the fiber array connector. None of these references disclose a fiber array connector and particularly a fiber array connector with depressions and a housing for the fibers that has protrusions seated within the depressions of the fiber array connector.

Claims 31-37

Claim 31 recites a method comprising providing a solid state radiation source that includes a plurality of LED dies to generate curing radiation and being mounted on an

interconnect circuit layer having at least two alignment holes, a plurality of optical concentrators within an optical concentrator array body having at least two alignment holes in alignment with the at least two alignment holes of the interconnect circuit layer, wherein each concentrator receives curing radiation from a corresponding one of said LED dies, a plurality of optical fibers, wherein each of the plurality of optical fibers includes a first end and a second end, wherein each first end is located within a fiber array connector having at least two alignment holes in alignment with the at least two alignment holes of the optical concentrator array body and wherein each first end receives concentrated curing radiation from a corresponding concentrator, and at least two alignment pins disposed within the at least two alignment holes of the interconnect circuit layer, the optical concentrator body, and the fiber array connector.... These recitations are supported by FIG. 1B and the related discussion.

Neither Hed, Decaudin, nor any of the other cited references disclose these recitations. None of these references disclose alignment holes on an interconnect circuit layer, an optical concentrator array body, and an optical fiber array body with the holes aligned such that alignment pins are positioned within the holes. Accordingly, claim 31 is allowable for at least these reasons.

Claims 32-37 depend from an allowable base claim and are also allowable for at least the same reasons.

Conclusion

Applicants assert that the application including all claims 1-37 is now in condition for allowance. Applicants request reconsideration in view of the amendments and remarks above and further request that a Notice of Allowability be provided. Should the Examiner have any questions, please contact the undersigned.

No fees are believed due beyond the fee for continued examination and a three month extension of time. The fee is attached.

Respectfully submitted,

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